Maria Spiropulu

Biography

MARIA SPIROPULU, a professor of physics at Caltech's Division of Physics Mathematics and Astronomy, is a world renowned experimental particle physics researcher and a notable mentor of many graduate and undergraduate students. She worked for ten years at the Tevatron's collider experiments at Fermilab in Chicago and thirteen years at the CERN's Large Hadron Collider, with leading roles on detector R&D and operations and in the searches for dark matter and other new physics, including the discovery of the Higgs boson. She is known for developing the "double blind" data analysis method for the first time in searches for supersymmetry at the Tevatron and inventing the novel "razor" framework for discovery and characterization of new physics in colliders.

Spiropulu received her PhD from Harvard in 2000 and was an Enrico Fermi Fellow at the University of Chicago until 2003. She moved to CERN in 2004 as a research staff physicist at the Physics Division and was promoted to a senior physicist position at CERN in 2008. She was appointed a professor of physics at Caltech in 2008. Spiropulu has been an AAAS fellow since 2010 "For her leadership in experimental high-energy physics, in particular for her pioneering efforts in the experimental search for supersymmetry and extra dimensions," and an APS fellow since 2014 "For pioneering searches for supersymmetry and extra dimensions at the Tevatron, innovative searches for new physics and the study of the Higgs boson at the LHC, and key contributions to triggering and data flow for CDF and CMS."

Since 2014 she has been working on advanced data technologies with an eye on using AI methods to enable and accelerate scientific discovery. She initiated a collaboration with leading quantum computation researchers targeting the embedding of physics problems onto the D-Wave quantum annealer.

Spiropulu is the chair of the Fermilab Physics Advisory Committee and a member of the High Energy Physics Advisory Panel (HEPAP) to the U.S. Department of Energy and the National Science Foundation. She is the chair of the Forum of International Physics of the American Physical Society, serves on the Advisory Panel of the HEP Forum for Computational Excellence and is a member of the Aspen Center for Physics.

Spiropulu has been contributing to intellectual exchange forums such as *Edge* (edge.org) and has participated in many public outreach science events and documentaries (NASA TV,*NOVA*, *Through the Wormhole*, the History Channel, among others). She is the author of "Where is Einstein?", the final chapter in *My Einstein: Essays by Twenty-Four of the World's Leading Thinkers on the Man, His Work, and His Legacy*.

She is the founder of the Physics of the Universe Summit (potus.caltech.edu), a meeting held under Chatham House Rules at SpaceX and Caltech since 2010 that explores challenges in emerging and cross-cutting areas of science and technology.